

FLIR NEUTRINO™

SWaP-C MWIR Camera Core

The Neutrino™ is the ideal solution when SWaP design constraints, cost, and performance are needed. Featuring the latest technological advancements, The Neutrino is FLIR's smallest and lightest OEM cooled camera core and incorporates the industry's most advanced image processing at the lowest cost and with the easiest integration of any MWIR System.

The Neutrino produces superb thermal images using its 640 x 512 InSb 15 μ m array. It utilizes FLIR's common software architecture and the same SDK, GUI and command protocols as FLIR's uncooled Tau and Quark family of LWIR cameras. For existing LWIR integrators, you can provide a high performance MWIR solution with ease. The Neutrino delivers performance, reliability and support – what you've come to expect from FLIR.

Key Features:

- 640 x 512 VGA resolution with 15 μ m pixel pitch
- NTSC or PAL analog video
- 8 or 14 bit digital data via: Camera Link, CMOS, BT-656
- Light weight: <16 oz (<450 gm)
- Easy Integration: Common software and accessories with Tau2 and Quark LWIR cameras
- Customizable AGC and DDE
- Interface with COTS IR optics



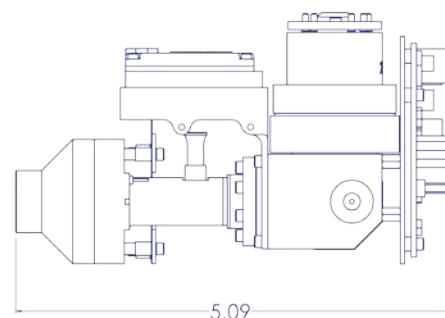
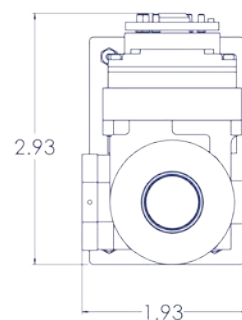
Airport Hanger



Oil Refinery depot

Imaging Specifications

Neutrino™	
Thermal Imager	640 x 512, (15µm pitch) MWIR InSb
FPA / Digital Video Display Format	640 x 512
Analog Video Display Format	640 x 512 (PAL), 640 x 480 NTSC
Spectral Band	3.4 - 5.1µm Standard
Full Frame Rates	30 Hz (NTSC), 25 Hz (PAL)
Sensitivity (NEDT)	<25mK
Time to Image	<6 min room temp, <10 min at 71°C
Physical Attributes	
Size (L x W x H)	(27.2 in³) 5" x 2.0" x 2.9"
f/number	f/4 Standard
Weight	<16 ounces
FPA Control	
ROIC	ISC0403
Direct Injection, Snapshot, Progressive operation	Yes
Programmable Integration Time	Yes (.01ms - 32ms)
Well Capacity	7 x 10 ⁶ electrons
Frame Rate	30Hz/25Hz
ROIC Modes	Free run, readout & integration priority
Image Processing & Display Controls	
NTSC/PAL (field switchable)	Yes
Image Optimization/AGC	Linear, Histogram, Once Bright, DDE+, etc.
Invert/Revert (analog and 8-bit digital)	Yes
Polarity Control (black hot/white hot)	Yes
Color & Monochrome Palettes (LUTs)	Yes
Continuous Zoom (digital and analog)	Yes
Symbology (256 gray & 256 color)	Yes
Digital Video	
Camera Link (14-bit or 8-bit)	Yes
CMOS (14-bit or 8-bit)	Yes
BT.656 (8-bit)	Yes
LVDS (14-bit or 8-bit)	Custom, Configurable at factory
Interfacing	
Primary Electrical Connector	50-pin Hirose
Input Power	4.75-6.0 VDC Camera, 9-35 VDC Cryocooler
Power Dissipation	<8W cooldown, <5W Steady State
RS-232 Compatible Communication	Auto Baud Rate
Discrete I/O Controls Available	Custom, configurable at factory
User Configurability via SDK & GUI	Yes
Environmental	
Operating Temperature Range	-40°C to +71°C
Non-Operating Temperature Range	-55°C to +80°C
Operational Altitude	40,000 ft
Humidity	(non-condensing between 5% - 95%)
Vibration	(5.8 grms three axis, 1 hr each)
Shock	(20g shock pulse w/ 11 msec half sine)



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